AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An adaptive antenna reception method, in which the directional beam of an array antenna consisting of a plurality of antenna elements is adaptively formed to receive a desired signal as well as to suppress interference signals in multiplexed signals transmitted from a plurality of senders, and the desired signal is corrected based on transmission channel estimation, the method comprising:

[[the]] a first step of adaptively updating [[the]] antenna weight according to signals received by the respective antenna elements and an error signal obtained from the desired signal corrected based on the transmission channel estimation;

[[the]] a second step of performing [[the]] a constraint process for the antenna weight obtained in the first step to maintain [[the]] a beam gain constant in [[the]] an arrival direction of the desired signal;

[[the]] a third step of receiving the desired signal through the array antenna using the antenna weight which has undergone the constraint process in the second step; and

[[the]] a fourth step of estimating the transmission channel of the desired signal received in the third step to correct the desired signal based on the estimation result.

2. (Original) The adaptive antenna reception method claimed in claim 1, wherein, in the second step, the constraint process is performed for the antenna weight using a direction vector that indicates the arrival direction of the desired signal.

3. (Currently Amended) The adaptive antenna reception method claimed in claim 2, further comprising:

[[the]] a fifth step of obtaining a correlation value between signals received by the respective adjacent antenna elements;

[[the]] a sixth step of calculating the average of the correlation values obtained in the fifth step;

[[the]] a seventh step of calculating the arctangent of the average obtained in the sixth step to find the phase; and

[[the]] an eighth step of calculating a direction vector based on the phase obtained in the seventh step.

4. (Original) The adaptive antenna reception method claimed in claim 1, wherein:

the first to fourth steps are performed with respect to, at least, one path; and

the desired signals corrected in the fourth step are combined to generate a multipath combined demodulation signal.

5. (Currently Amended) An adaptive antenna receiver, which adaptively forms the directional beam of an array antenna consisting of a plurality of antenna elements to receive a desired signal while suppressing interference signals in multiplexed signals transmitted from a plurality of senders, and corrects the desired

3

signal based on transmission channel estimation, the adaptive antenna receiver comprising:

an antenna weight adaptive update means for adaptively updating the antenna weight according to signals received by the respective antenna elements and an error signal obtained from the desired signal corrected based on the transmission channel estimation;

an antenna weight direction constraint means for performing [[the]] a constraint process for the antenna weight obtained by the antenna weight adaptive update means to maintain the beam gain constant in [[the]] an arrival direction of the desired signal;

a beamformer for receiving the desired signal through the array antenna using the antenna weight which has undergone the constraint process performed by the antenna weight direction constraint means; and

a transmission channel estimation means for estimating the transmission channel of the desired signal received by the beamformer to correct the desired signal based on the estimation result.

6. (Original) The adaptive antenna receiver claimed in claim 5, wherein the antenna weight direction constraint means performs the constraint process for the antenna weight using a direction vector that indicates the arrival direction of the desired signal.

4

7. (Original) The adaptive antenna receiver claimed in claim 6, further comprising:

an adjacent antenna correlation detection means for obtaining a correlation value between signals received by the respective adjacent antenna elements;

an antenna correlation averaging means for calculating the average of the correlation values obtained by the adjacent antenna correlation detection means;

an arctangent calculation means for calculating the arctangent of the average obtained by the antenna correlation averaging means to find the phase; and

a direction vector calculation means for calculating a direction vector based on the phase obtained by the arctangent calculation means.

8. (Original) The adaptive antenna receiver claimed in claim 5, further comprising a combine means for multipath combining at least one desired signal received through each path to generate a demodulation signal.